

REMARKS

The Office Action dated February 22, 2002, has been carefully reviewed in light of the Examiner's helpful comments and suggestions.

As a result of the Office Action, claim 1 stands rejected under 35 U.S.C. 102(b) as being anticipated by Redmond. This reference has been carefully reviewed but is not believed to show or suggest Applicants' claimed invention in any manner. Reconsideration and allowance of the pending claim is therefore respectfully requested in view of the following remarks.

Amended claim 1 now requires that a diffusion and reflection plate be disposed opposed to the rear side surface of the light guide so that the light discharged from the rear side surface is diffused and reflected wherein the first angle and the second angle are selected so that the display panel is illuminated by mixture of primary light reflected from the front side and secondary light reflected from the diffusion and reflection plate and reflected from the rear side.

Since the display panel is illuminated by light rays diffused by the diffusion and reflection plate, and mixed by reflecting from the front side and from the rear side of the groove, the display is uniformly illuminated. Moreover, the LED as the light source has a single light discharge opening.

The Redmond reference does not disclose or teach a diffusion and reflection plate as required by claim 1. The Redmond reference teaches that the front side angle should be selected so that light entering the lighting panel through end surface 19 is reflected along the panel toward the end surface 20 by facets 23. More specifically, "... the facets 23 and 24

are shaped so that light entering the lighting panel through end surface 20 by facets 23. Light reflected back into the lighting panel at end 20 strikes the facets 24 and is either specularly reflected upward through planar major surface 17 or transmitted further along the lighting panel.” (‘862 *Specification*, column 3, lines 11-17). Therefore, all light rays from the edge light 14 (light source) are applied to the end surface 20 by facets 23 and light rays reflected from the reflector 28 are applied to the display assembly 11, and the light rays are reflected from the facets 24 to the surface 17.

Moreover, in response to Applicants’ arguments, the Examiner asserts that “. . . at columns 4-5 and figs. 5 and 6 in which Redmond et al disclose that light rays used to illuminate the display panel are light rays reflected from the first facet (60) and from the second facet (61) of each groove (60).” (*Office Action dated February 22, 2002*, page 5). However, Applicants respectfully submit that this assertion is incorrect. What the Examiner is referring to in FIGS. 5 and 6 of the Redmond are alternative embodiments of the edge light 14, which construction-wise is irrelevant to the construction of the display assembly 11, which is used as the basis for the rejection of claim 1. As clearly stated in column 2, lines 29-34 of the Redmond reference, “FIG. 5 is an enlarged cross-sectional view, partially broken away, of an edge light in accordance with another embodiment of the invention; FIG. 6 is an enlarged cross-sectional view, partially broken away, of an edge light in accordance with another embodiment of the invention.” Moreover, in order to apply all input light rays to the rear reflector 28, it is necessary to provide a space between adjacent facets, as shown in FIGS. 1 and 9. Therefore, the Redmond reference does not teach or suggest the continuously formed triangular grooves as required by claim 1.

Claim 1 further requires an LED with a single light discharge opening disposed at a central position of the front side surface of the light guide. Redmond does not show or disclose an LED with a single light discharge opening, rather, it discloses a pair of incandescent lamps 47 as the light source which is very complicated in nature and are not LED's. For these reasons, it is respectfully submitted that claim 1 is not anticipated by Redmond and is therefore allowable.

Each issue raised in the Office Action dated February 22, 2002, has been addressed and it is believed that claim 1 is now in condition for allowance. Wherefore, reconsideration and allowance of this claim is earnestly solicited.

Respectfully submitted,
Dennison, Schultz &
Dougherty

By: 

Amir H. Behnia
Attorney for Applicants
Reg. No. 50,215
(703) 412-1155 Ext. 16

Date: June 24, 2002

IN THE CLAIMS:

1. (Thrice Amended) An illuminating device for a display comprising:

a display panel;

a light guide having a light reflection surface, a light discharge surface opposite to the light reflection surface and parallel to the light reflection surface, a front side surface, and a rear side surface, and disposed under the display panel so that the light discharge surface opposes to the display panel;

an LED having a single light discharge opening and provided to oppose to the front side surface of the light guide at a central position of the front side surface;

a plurality of triangular grooves continuously formed in the light reflection surface from end to end,

each of the triangular grooves comprising a front side having a first angle with respect to a line perpendicular to the light discharge surface and a rear side having a second angle with respect to a line perpendicular to the light discharge surface which is smaller than the first angle; and,

a diffusion and reflection plate disposed to oppose to the rear side surface of the light guide so that the light discharge from the rear side surface is diffused and reflected, wherein

the first angle and the second angle are selected so that the display panel is illuminated by a mixture of primary light reflected from the front side and secondary light reflected from the diffusion and reflection plate and reflected from the rear side.